

CLAIMS

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1. An enforcement architecture for digital rights management, wherein the architecture enforces rights in protected digital content, the architecture comprising:

a content server for distributing the digital content;

a license server for issuing at least one digital license corresponding

10 to and separate from the digital content; and

a computing device for receiving the distributed digital content and for receiving and storing any digital license corresponding to the digital content, the computing device having:

a rendering application for rendering the digital content; and

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a Digital Rights Management (DRM) system for being invoked by the rendering application upon such rendering application attempting to render the digital content, the DRM system for determining whether a right to render the digital content in the manner sought exists based on any digital license stored in the computing device and corresponding to the digital content.

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2. The architecture of claim 1, wherein the content server is communicatively coupled to a network and distributes the digital content over the network.

25 3. The architecture of claim 2, wherein the content server is communicatively coupled to the Internet and distributes the digital content over the Internet.

4. The architecture of claim 1, wherein the license server is communicatively coupled to a network and issues the at least one digital license over the network.

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5. The architecture of claim 4, wherein the license server is communicatively coupled to the Internet and issues the at least one digital license over the Internet.

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6. The architecture of claim 1, wherein the content server is communicatively coupled to a portable medium writer and distributes the digital content on a portable medium written by the portable medium writer, the portable medium selected from the group consisting of an optical storage medium and a magnetic storage medium.

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7. The architecture of claim 1, wherein the content server distributes the digital content in an encrypted form.

8. The architecture of claim 7, wherein each digital license corresponding to the digital content includes:

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a decryption key that decrypts the encrypted digital content; and
a description of the rights conferred by the license, wherein the encrypted digital content cannot be decrypted and rendered without obtaining such license from the license server.

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9. The architecture of claim 8, wherein each digital license corresponding to the digital content further includes a digital signature that binds the license to the encrypted digital content.

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10. The architecture of claim 1, wherein if the DRM system determines that the right to render the digital content in the manner sought does not exist based on any digital license stored in the computing device and corresponding to the digital content, such DRM system directs a computing device user to the license server to obtain a digital license to render such digital content in the manner sought.

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11. The architecture of claim 1, wherein if the DRM system determines that the right to render the digital content in the manner sought does not exist based on any digital license stored in the computing device and corresponding to the digital content, such DRM system transparently obtains a digital license from the license server without any action necessary on the part of a computing device user.

12. The architecture of claim 1, wherein the DRM system includes a license store for storing digital licenses.

10 13. The architecture of claim 1, wherein each digital license
corresponding to the digital content is bound to such digital content.

14. The architecture of claim 13, wherein each digital license
corresponding to the digital content is bound to such digital content by way of a public /
15 private key technique.

15. The architecture of claim 1, wherein the license server issues a digital license to a DRM system only if the license server trusts such DRM system to abide by the license.

16. The architecture of claim 15, wherein the content server distributes the digital content in an encrypted form, and wherein the DRM system includes a trusted black box for performing decryption and encryption functions for such DRM system.

25 17. The architecture of claim 16, wherein the black box includes a
unique public / private key pair for performing the decryption and encryption functions.

18. The architecture of claim 17, wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the black box public key, the license server encrypting at least a portion of the

1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2

digital license according to the black box public key prior to issuance of such license, thereby binding such license to such black box.

19. The architecture of claim 18, wherein the content server distributes
5 the digital content in an encrypted form, wherein each digital license corresponding to the
digital content includes a decryption key that decrypts the encrypted digital content, and
wherein the license server encrypts the decryption key in the license according to the black
box public key.

10 20. The architecture of claim 19, wherein each digital license
corresponding to the digital content further includes a description of the rights conferred
by the license, wherein the encrypted digital content cannot be decrypted and rendered
without obtaining such license from the license server, and wherein the license server
encrypts the rights description in the license according to the decryption key.

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21. The architecture of claim 16, wherein the black box includes a version number.

22. The architecture of claim 21 wherein the license server issues each
20 digital license in response to a license request from the DRM system, the license request
including the version number of the black box, the license server determining prior to
issuance of the license whether the version number of the black box is acceptable, the
license server upon determining that the version number of the black box is not acceptable
refusing to issue the license until the black box is updated, the architecture further
25 comprising a black box server for providing an updated black box to the DRM system.

23. The architecture of claim 16, wherein the black box includes a certifying authority signature as provided by an approved certifying authority.

30 24. The architecture of claim 23 wherein the license server issues each

digital license in response to a license request from the DRM system, the license request including the certifying authority signature, the license server determining prior to issuance of the license whether the certifying authority signature is valid.

- 5 25. The architecture of claim 15, wherein each digital license corresponding to the digital content includes a description of the rights conferred by the license, and wherein the DRM system includes a trusted license evaluator for evaluating the rights description and allowing rendering of the digital content by the rendering application only if such rendering is in accordance with the rights description of the
- 10 license.
26. The architecture of claim 1 further comprising an issued license database for maintaining information on digital licenses issued by the license server, wherein if the computing device loses a received license, a re-issue thereof may be
- 15 provided based on the information in the issued license database.
27. The architecture of claim 1 further comprising an authoring tool for authoring the digital content distributed by the content server in a form amenable to the architecture.
- 20 28. The architecture of claim 27 wherein the authoring tool encrypts the digital content according to a decryption key and stores information on the digital content and the encryption key in a content-key database.
- 25 29. The architecture of claim 28 wherein the license server accesses the information on the digital content and the encryption key in the content-key database prior to issuance of a license corresponding to the digital content, and includes the decryption key with such license as issued.
- 30 30. A method for implementing digital rights management, wherein the

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method enforces rights in protected digital content, the method comprising:

distributing the digital content from a content server to a computing device of a user;

receiving the distributed digital content at the computing device;

5 attempting to render the digital content by way of a rendering application;

invoking, by the rendering application, a Digital Rights Management (DRM) system upon such rendering application attempting to render the digital content;

10 determining, by the DRM system, whether a right to render the digital content in the manner sought exists based on any digital license stored in the computing device and corresponding to the digital content; and

if the right does not exist:

15 requesting from a license server a digital license that provides such right and that corresponds to and is separate from the digital content;

issuing, by the license server, the digital license to the DRM system;

receiving, by the computing device, the issued digital license corresponding to the digital content from the license server; and

20 storing the received digital license on the computing device.

31. The method of claim 30, wherein the distributing step comprises distributing the digital content over a network.

25 32. The method of claim 31, wherein the distributing step comprises distributing the digital content over the Internet.

33. The method of claim 30, wherein the issuing step comprises issuing the digital license over a network.

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34. The method of claim 33, wherein the issuing step comprises issuing the digital license over the Internet.

35. The method of claim 30, wherein the distributing step comprises
5 distributing the digital content on a portable medium selected from the group consisting of
an optical storage medium and a magnetic storage medium.

36. The method of claim 30, wherein the distributing step comprises distributing the digital content in an encrypted form.

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37. The method of claim 36, further comprising including with each digital license corresponding to the digital content:

a decryption key that decrypts the encrypted digital content; and

a description of the rights conferred by the license, wherein the

15 encrypted digital content cannot be decrypted and rendered without obtaining such license
from the license server.

38. The method of claim 37, wherein the including step further comprises including with each digital license corresponding to the digital content a digital signature that binds the license to the encrypted digital content.

39. The method of claim 30, wherein the requesting a digital license step comprises directing, by the DRM system, a computing device user to the license server to obtain a digital license to render such digital content in the manner sought.

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40. The method of claim 30, wherein the requesting a digital license step comprises transparently obtaining, by the DRM system, a digital license from the license server without any action necessary on the part of a computing device user.

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41. The method of claim 30, wherein the storing step comprises storing,

[illegible]

by the DRM system, the received digital license in a license store of the DRM system.

42. The method of claim 30, further comprising binding, by the license server, the digital license to the corresponding digital content.

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43. The method of claim 42, comprising binding, by the license server, the digital license to the corresponding digital content by way of a public / private key technique.

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44. The method of claim 30, wherein the issuing step comprises issuing, by the license server, the digital license to the DRM system only if the license server trusts such DRM system to abide by the license.

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45. The method of claim 44, wherein the distributing step comprises distributing, by the content server, the digital content in an encrypted form, and further comprising employing a trusted black box in the DRM system to perform decryption and encryption functions for such DRM system.

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46. The method of claim 45, wherein the black box includes a public / private key pair, and wherein the requesting a digital license step comprises including in the request the black box public key, and further comprising encrypting, by the license server, at least a portion of the digital license according to the black box public key prior to issuance of such license, thereby binding such license to such black box.

[illegible]

47. The method of claim 46, wherein the distributing step comprises distributing the digital content in an encrypted form, and further comprising:

including with each digital license corresponding to the digital content a decryption key that decrypts the encrypted digital content; and

5 encrypting, by the license server, the decryption key in the license
according to the black box public key.

48. The method of claim 47, further comprising:

including with each digital license corresponding to the digital
10 content a description of the rights conferred by the license, wherein the encrypted digital
content cannot be decrypted and rendered without obtaining such license from the license
server; and

encrypting, by the license server, the rights description in the license according to the decryption key.

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49. The method of claim 45, wherein the black box includes a version number, and wherein the requesting a digital license step comprises including in the request the version number of the black box, and further comprising:

determining, by the license server, prior to issuance of the license
20 whether the version number of the black box is acceptable; and

upon determining that the version number of the black box is not acceptable, the license server refusing to issue the license until the black box is updated, the architecture further comprising a black box server for providing an updated black box to the DRM system.

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50. The method of claim 45, wherein the black box includes a certifying authority signature as provided by an approved certifying authority, and wherein the requesting a digital license step comprises including the certifying authority signature, the license server determining prior to issuance of the license whether the certifying authority

30 signature is valid.

51. The method of claim 44, wherein the issuing the digital license step comprises including with the digital license a description of the rights conferred by the
5 license, and further comprising:

evaluating, by a trusted license evaluator of the DRM system, the rights description; and

allowing rendering of the digital content by the rendering application only if such rendering is in accordance with the rights description of the
10 license.

52. The method of claim 30 further comprising maintaining information on digital licenses issued by the license server in an issued license database, wherein if the computing device loses a received license, a re-issue thereof may be provided based on the
15 information in the issued license database.

53. The method of claim 30 further comprising authoring, by an authoring tool, the digital content distributed by the content server in a form amenable to the architecture.
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54. The method of claim 53 wherein the authoring step comprises:
encrypting the digital content according to a decryption key; and
storing information on the digital content and the encryption key in
a content-key database.
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55. The method of claim 54 wherein the issuing the digital license step comprises:
accessing, by the license server, the information on the digital content and the encryption key in the content-key database prior to issuance of a license
30 corresponding to the digital content; and

including the decryption key with such license as issued.

56. An enforcement architecture for digital rights management, wherein the architecture enforces rights in protected digital content, the architecture comprising:

5 a content server communicatively coupled to a network for distributing the digital content over the network;

a license server for issuing at least one digital license corresponding to and separate from the digital content, the license server being communicatively coupled to the network for issuing the at least one digital license over the network; and

10 a computing device communicatively coupled to the network for receiving the distributed digital content and for receiving any digital license corresponding to the digital content, the computing device also having:

a memory for storing any digital license corresponding to the digital content;

15 a rendering application for attempting to render the digital content; and

a Digital Rights Management (DRM) system for being invoked by the rendering application upon such rendering application attempting to render the digital content, the DRM system for determining whether a right to render the digital content in the manner sought exists based on any digital license stored in the computing device and corresponding to the digital content.

57. The architecture of claim 56, wherein the content server is communicatively coupled to the Internet and distributes the digital content over the Internet.

58. The architecture of claim 56, wherein the license server is communicatively coupled to the Internet and issues the at least one digital license over the Internet.

59. The architecture of claim 56, wherein the content server is also communicatively coupled to a portable medium writer and distributes the digital content on a portable medium written by the portable medium writer, the portable medium selected from the group consisting of an optical storage medium and a magnetic storage medium, and wherein the computing device includes a portable medium reader corresponding to the portable medium writer for receiving and reading the portable medium.

60. The architecture of claim 56, wherein the content server distributes the digital content in an encrypted form.

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61. The architecture of claim 60, wherein each digital license corresponding to the digital content includes:

a decryption key that decrypts the encrypted digital content; and
a description of the rights conferred by the license, wherein the encrypted digital content cannot be decrypted and rendered without obtaining such license from the license server.

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62. The architecture of claim 61, wherein each digital license corresponding to the digital content further includes a digital signature that binds the license to the encrypted digital content.

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63. The architecture of claim 56, wherein if the DRM system determines that the right to render the digital content in the manner sought does not exist based on any digital license stored in the computing device and corresponding to the digital content, such DRM system directs a computing device user to the license server to obtain a digital license to render such digital content in the manner sought.

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64. The architecture of claim 56, wherein if the DRM system determines that the right to render the digital content in the manner sought does not exist based on any digital license stored in the computing device and corresponding to the

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digital content, such DRM system transparently obtains a digital license from the license server without any action necessary on the part of a computing device user.

65. The architecture of claim 56, wherein the DRM system includes a
5 license store for storing digital licenses.

66. The architecture of claim 56, wherein each digital license corresponding to the digital content is bound to such digital content.

10 67. The architecture of claim 66, wherein each digital license
corresponding to the digital content is bound to such digital content by way of a public /
private key technique.

15 68. The architecture of claim 56, wherein the license server issues a digital license to a DRM system only if the license server trusts such DRM system to abide by the license.

69. The architecture of claim 68, wherein the content server distributes the digital content in an encrypted form, and wherein the DRM system includes a trusted black box for performing decryption and encryption functions for such DRM system.

70. The architecture of claim 69, wherein the black box includes a unique public / private key pair for performing the decryption and encryption functions.

25 71. The architecture of claim 70, wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the black box public key, the license server encrypting at least a portion of the digital license according to the black box public key prior to issuance of such license, thereby binding such license to such black box.

72. The architecture of claim 71, wherein the content server distributes the digital content in an encrypted form, wherein each digital license corresponding to the digital content includes a decryption key that decrypts the encrypted digital content, and wherein the license server encrypts the decryption key in the license according to the black box public key.

73. The architecture of claim 72, wherein each digital license corresponding to the digital content further includes a description of the rights conferred by the license, wherein the encrypted digital content cannot be decrypted and rendered without obtaining such license from the license server, and wherein the license server encrypts the rights description in the license according to the decryption key.

74. The architecture of claim 69, wherein the black box includes a version number.

75. The architecture of claim 74 wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the version number of the black box, the license server determining prior to issuance of the license whether the version number of the black box is acceptable, the license server upon determining that the version number of the black box is not acceptable refusing to issue the license until the black box is updated, the architecture further comprising a black box server for providing an updated black box to the DRM system.

76. The architecture of claim 69, wherein the black box includes a certifying authority signature as provided by an approved certifying authority.

77. The architecture of claim 76 wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the certifying authority signature, the license server determining prior to issuance of the license whether the certifying authority signature is valid.

78. The architecture of claim 68, wherein each digital license corresponding to the digital content includes a description of the rights conferred by the license, and wherein the DRM system includes a trusted license evaluator for evaluating the rights description and allowing rendering of the digital content by the rendering application only if such rendering is in accordance with the rights description of the license.

79. The architecture of claim 56 further comprising an issued license database for maintaining information on digital licenses issued by the license server, wherein if the computing device loses a received license, a re-issue thereof may be provided based on the information in the issued license database.

80. The architecture of claim 56 further comprising an authoring tool for authoring the digital content distributed by the content server in a form amenable to the architecture.

81. The architecture of claim 80 wherein the authoring tool encrypts the digital content according to a decryption key and stores information on the digital content and the encryption key in a content-key database.

82. The architecture of claim 81 wherein the license server accesses the information on the digital content and the encryption key in the content-key database prior to issuance of a license corresponding to the digital content, and includes the decryption key with such license as issued.

83. An enforcement architecture for digital rights management, wherein the architecture enforces rights in protected digital content, the architecture comprising:
an authoring tool for authoring the digital content in a form amenable to the architecture;

a content server for receiving the digital content from the authoring tool and distributing the digital content; and

a license server for issuing at least one digital license corresponding to and separate from the digital content, wherein a computing device receives the distributed digital content and receives and stores any digital license corresponding to the digital content, the computing device having a rendering application for rendering the digital content; and a Digital Rights Management (DRM) system for being invoked by the rendering application upon such rendering application attempting to render the digital content, the DRM system for determining whether a right to render the digital content in the manner sought exists based on any digital license stored in the computing device and corresponding to the digital content.

84. The architecture of claim 83, wherein the content server is communicatively coupled to a network and distributes the digital content over the network.

85. The architecture of claim 84, wherein the content server is communicatively coupled to the Internet and distributes the digital content over the Internet.

20 86. The architecture of claim 83, wherein the license server is
communicatively coupled to a network and issues the at least one digital license over the
network.

87. The architecture of claim 86, wherein the license server is
25 communicatively coupled to the Internet and issues the at least one digital license over the
Internet.

88. The architecture of claim 83, wherein the content server is communicatively coupled to a portable medium writer and distributes the digital content on a portable medium written by the portable medium writer, the portable medium selected

Table 1 Summary of the data sets used in the study

| Dataset | Number of subjects | Number of trials | Number of conditions | Number of trials per condition |
|------------|--------------------|------------------|----------------------|--------------------------------|
| Dataset 1 | 10 | 100 | 10 | 10 |
| Dataset 2 | 10 | 100 | 10 | 10 |
| Dataset 3 | 10 | 100 | 10 | 10 |
| Dataset 4 | 10 | 100 | 10 | 10 |
| Dataset 5 | 10 | 100 | 10 | 10 |
| Dataset 6 | 10 | 100 | 10 | 10 |
| Dataset 7 | 10 | 100 | 10 | 10 |
| Dataset 8 | 10 | 100 | 10 | 10 |
| Dataset 9 | 10 | 100 | 10 | 10 |
| Dataset 10 | 10 | 100 | 10 | 10 |

from the group consisting of an optical storage medium and a magnetic storage medium.

89. The architecture of claim 1, wherein the content server distributes the digital content in an encrypted form.

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90. The architecture of claim 89, wherein each digital license corresponding to the digital content includes:

a decryption key that decrypts the encrypted digital content; and

a description of the rights conferred by the license, wherein the

10 encrypted digital content cannot be decrypted and rendered without obtaining such license from the license server.

91. The architecture of claim 90, wherein each digital license corresponding to the digital content further includes a digital signature that binds the
15 license to the encrypted digital content.

92. The architecture of claim 83, wherein a computing device user is directed to the license server by the DRM system to obtain a digital license to render the digital content in the manner sought if the DRM system determines that the right to render
20 such digital content in the manner sought does not exist based on any digital license stored in the computing device and corresponding to the digital content.

93. The architecture of claim 83, wherein the DRM system transparently obtains a digital license from the license server without any action necessary
25 on the part of a computing device user if the DRM system determines that the right to render the digital content in the manner sought does not exist based on any digital license stored in the computing device and corresponding to the digital content.

94. The architecture of claim 83, wherein each digital license
30 corresponding to the digital content is bound to such digital content.

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95. The architecture of claim 94, wherein each digital license corresponding to the digital content is bound to such digital content by way of a public / private key technique.

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96. The architecture of claim 83, wherein the license server issues a digital license to a DRM system only if the license server trusts such DRM system to abide by the license.

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97. The architecture of claim 96, wherein the content server distributes the digital content in an encrypted form, wherein the DRM system includes a trusted black box for performing decryption and encryption functions for such DRM system, wherein the black box includes a unique public / private key pair for performing the decryption and encryption functions, and wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the black box public key, the license server encrypting at least a portion of the digital license according to the black box public key prior to issuance of such license, thereby binding such license to such black box.

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98. The architecture of claim 97, wherein the content server distributes the digital content in an encrypted form, wherein each digital license corresponding to the digital content includes a decryption key that decrypts the encrypted digital content, and wherein the license server encrypts the decryption key in the license according to the black box public key.

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99. The architecture of claim 98, wherein each digital license corresponding to the digital content further includes a description of the rights conferred by the license, wherein the encrypted digital content cannot be decrypted and rendered without obtaining such license from the license server, and wherein the license server encrypts the rights description in the license according to the decryption key.

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100. The architecture of claim 97, wherein the black box includes a version number, and wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the version number of the black box, the license server determining prior to issuance of the license whether the version number of the black box is acceptable, the license server upon determining that the version number of the black box is not acceptable refusing to issue the license until the black box is updated, the architecture further comprising a black box server for providing an updated black box to the DRM system.

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101. The architecture of claim 97, wherein the black box includes a certifying authority signature as provided by an approved certifying authority, and wherein the license server issues each digital license in response to a license request from the DRM system, the license request including the certifying authority signature, the license server determining prior to issuance of the license whether the certifying authority signature is valid.

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102. The architecture of claim 96, wherein each digital license corresponding to the digital content includes a description of the rights conferred by the license, and wherein the DRM system includes a trusted license evaluator for evaluating the rights description and allowing rendering of the digital content by the rendering application only if such rendering is in accordance with the rights description of the license.

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103. The architecture of claim 83 further comprising an issued license database for maintaining information on digital licenses issued by the license server, wherein if the computing device loses a received license, a re-issue thereof may be provided based on the information in the issued license database.

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104. The architecture of claim 83 wherein the authoring tool encrypts the

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digital content according to a decryption key and stores information on the digital content and the encryption key in a content-key database.

105. The architecture of claim 104 wherein the license server accesses
5 the information on the digital content and the encryption key in the content-key database
prior to issuance of a license corresponding to the digital content, and includes the
decryption key with such license as issued.

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